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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,763	01/23/2004	Joseph G. Vockley	SAIC0086	3114

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KING & SPALDING LLP (SAIC CUSTOMER NUMBER)  
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EXAMINER
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RIGGS II, LARRY D

ART UNIT	PAPER NUMBER
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1631

NOTIFICATION DATE	DELIVERY MODE
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05/04/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/762,763	<b>Applicant(s)</b> VOCKLEY ET AL.	
	<b>Examiner</b> LARRY D. RIGGS II	<b>Art Unit</b> 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 12-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicant's amendments filed 29 December 2009 are acknowledged and entered.

#### ***Status of Claims***

Claims 1-11 and 15 are cancelled. Claims 12-14 are currently pending and under consideration.

#### ***Withdrawn Rejections/Objections***

The rejection of claims 13 and 14 under 35 U.S.C. §101, in the Office action mailed 13 October 2009 is withdrawn in view of the amendments filed 29 December 2009.

The rejection of claims 12-14 under 35 U.S.C. §103(a) over Lai et al. in view of Benson et al. in view of Neuwald et al., in the Office action mailed 13 October 2009 is withdrawn in view of the amendments filed 29 December 2009.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn due to the amendments filed 29 December 2009. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lai et al. (Biochimica et Biophysica acta, 2001, 1517, 449-454) in view of Benson et al. (Nucleic Acids Research, 1993, 21(13), 2963-2965) and further in view of Person (US 2002/0072862).

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The instant claims are drawn to a method performed on a suitably programmed computer, comprising: obtaining genomic data from a first set (or second set, claim 14) of organisms; formatting by a computer program, the genomic data into query-length sequences; searching, by a similarity search engine program, a genomic database using the query-length sequences, wherein the database contains genomic data from a plurality of organisms; parsing the results of the search for sequences having homology above a threshold other than the first set (second set, claim 14); identifying non-unique sequences and re-evaluating a subset of those results for unique sequences, removing the non-unique sequences from the selected genomic database until only evaluated sequences that are unique remain; and outputting to a user an identity of those unique sequences.

Regarding claim 12, Lai et al. discloses a method for obtaining EST sequences from humans (page 449, 2nd column, lines 2-4). Lai et al. teaches formatting of these sequences to be used by a BLAST search engine (page 449, 2nd column, lines 5-6), searching a database of human sequences from the human gene index, HGI (page 449, 2nd column, first paragraph), searching the GeneBank database, (page 451, left column, second paragraph), and parsing the results (page 449, 2nd column, lines 12-13) to identify *Drosophila* genes having homology above a given threshold (page 449, 2nd column). Lai et al. teaches BLAST reports that provide thresholds controlled by the user regarding identity, similarity (homology), score, (it is known in the art that BLAST reports show scores), expected (E) value and length of sequence under consideration, (page

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449, right column; page 452, right column-page 454, left column, first paragraph; Figure 2). Lai et al. teaches alignment of human TPR motif and consensus sequence of *Drosophila* TPR motif and output to a user, (Figure 2).

Lai et al. does not teach that the genomic database contains genomic data from a plurality of organisms or re-evaluating non-unique sequences resulting from the search and removing sequences that are non-unique from the selected genomic database, leaving only unique sequences.

Benson et al. shows the GenBank database that contains, as of April 1993, 129 million bases, distributed in 14 different divisions, such as bacterial, viral, mammalian, primate, etc., (see page 2964, right column, last paragraph – page 2965, left column, first paragraph).

Lai et al. and Benson et al. do not teach re-evaluating non-unique sequences resulting from the search and removing sequences that are non-unique from the selected genomic database, leaving only unique sequences.

Person teaches a method of comparing and aligning a query sequence with a plurality of previously stored sequence fragments to produce a database of unique sequences, (abstract). Person teaches a parsing program that scans alignments produced and accumulates them in a buffer. Pairwise alignments are reduced and contigs are created which are then re-processed (re-evaluated) back through the sequence alignments algorithm until the query sequence alignments process identifies all known matching sequences in the target databases (unique and rep files), (paragraphs 65, 66, 74). If there are no matches, then the query sequence is placed in the unique file, (paragraph 75).

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Further, if there are matches between the query sequence and the unique and rep files, the boundary regions are defined and fragments of the query sequence are determined. If the fragments are not unique they are ignored (thrown out). If the fragments are unique they are kept, (paragraph 76).

Regarding claim 13, Person teaches a system, computer desktop, computer readable medium, computer programs, graphical representation, (implying a user interface), (paragraphs 1, 3, 26, 41-46, 86; claims 22-23).

Regarding claim 14, Lai et al. shows comparison of human crooked protein and Drosophila crooked neck protein (first set), and human crooked neck protein and yeast clf1 protein (second set), with their subsequent identities and similarities, (page 452, right column, line 58 – page 454, line 2).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to modify the method of identifying analogous genes by comparative gene identification by Lai et al by providing the information regarding the plurality of organisms within GenBank by Benson et al. and a method that provides a file of unique sequences by Person because Lai et al. shows the importance of obtaining differing data multiple sequence sources because there are several proteins with similar TPR structures (crooked neck protein) from several different organisms, (page 452, right column) and identifying related species, (page 449, left column). Each of the elements are known in the art, the art is in the same technology, i.e. genomic sequence analysis, and combinable. One of ordinary skill would have recognized that the results of the combination were predictable because a person of ordinary skill in the art would recognize

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that obtaining sequence data from multiple organisms as shown in Benson et al. would result in a broad spectrum of data to better identify novel human sequences. Likewise, a person of ordinary skill in the art would recognize that Person provides an efficient way to identify genes by providing unique sequences from the vast volume of redundant sequences, (paragraph 7).

### ***Response to Arguments***

Applicant's arguments filed 29 December 2009 have been fully considered but they are not persuasive.

Applicant argues that Lai et al. and Benson et al. do not teach re-evaluating non-unique sequences resulting from the search and removing sequences that are non-unique from the selected genomic database, leaving only unique sequences.

Examiner agrees that Lai et al. and Benson et al. do not teach re-evaluating non-unique sequences resulting from the search and removing sequences that are non-unique from the selected genomic database, leaving only unique sequences, however, Person remedies Lai et al. and Benson et al.'s deficiencies by meeting these limitations. See above.

### ***Conclusion***

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**.



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See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LARRY D. RIGGS II whose telephone number is (571)270-3062. The examiner can normally be reached on Monday-Thursday, 7:30AM-5:00PM, ALT. Friday, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie Moran can be reached on 571-272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LDR/  
Larry Riggs  
Examiner, Art Unit 1631

/Marjorie Moran/  
Supervisory Patent Examiner, Art Unit 1631